What Is Claimed Is:

1. Apparatus for equalizing the amplitudes of the bandedges of a broadband signal comprising:

5   a pre-equalizer for adjusting the amplitudes of the bandedges of said broadband signal in response to a control signal;

a bandedge filter, connected to said pre-equalizer, for extracting a bandedge signal from said broadband signal; and

a bandedge signal processor, connected to said bandedge filter, for

10 generating said control signal in response to said bandedge signal.

2. The apparatus of claim 1 wherein said bandedge signal processor comprises:

a first filter for producing a first bandedge signal from said bandedge

15 signal;

a second filter for producing a second bandedge signal from said bandedge signal;

a first magnitude processor, connected to said first filter, for generating a first magnitude value representing the magnitude of said first

20 bandedge signal; and

a second magnitude processor, connected to said second filter, for generating a second magnitude value representing the magnitude of said second bandedge signal.

25 3. The apparatus of claim 2 wherein said bandedge signal processor further comprises:

a subtractor, connected to said first and second magnitude processors, for producing a difference value representing the difference between said first and second magnitude values; and

30   a loop filter, connected to said subtractor, for generating said control signal from said difference value.

4. The apparatus of claim 2 wherein said first filter is a first Hilbert filter.

5. The apparatus of claim 2 wherein said second filter is a second Hilbert filter.

6. The apparatus of claim 4 wherein said first Hilbert filter has a form

$$\begin{bmatrix} 0 & 1 & 0 \\ -.5 & 0 & .5 \end{bmatrix}.$$

7. The apparatus of claim 5 wherein said second Hilbert filter has a form

$$\begin{bmatrix} 0 & 1 & 0 \\ .5 & 0 & -.5 \end{bmatrix}.$$

8. The apparatus of claim 1 wherein the pre-equalizer has the form $\begin{bmatrix} 0 & 1 & 0 \\ \alpha & 0 & -\alpha \end{bmatrix}$, where α is a magnitude of the control signal.

9. The apparatus of claim 1 wherein the pre-equalizer attenuates a particular bandedge of said broadband signal in response to said control signal.

10. The apparatus of claim 1 wherein the pre-equalizer amplifies a particular bandedge of said broadband signal in response to said control signal.

11. Apparatus for equalizing the amplitudes of the bandedges of a broadband signal comprising:

a pre-equalizer for adjusting the amplitudes of the bandedges of said broadband signal in response to a control signal;

a bandedge filter, connected to said pre-equalizer, for extracting a bandedge signal from said broadband signal;

a first Hilbert filter connected to said bandedge filter for producing a first bandedge signal from said bandedge signal;

a second Hilbert filter connected to said bandedge filter for producing a second bandedge signal from said bandedge signal;

5   a first magnitude processor, connected to said first Hilbert filter, for generating a first magnitude value representing the magnitude of said first bandedge signal; and

a second magnitude processor, connected to said second Hilbert filter, for generating a second magnitude value representing the magnitude of

10   said second bandedge signal

a subtractor, connected to said first and second magnitude processors, for producing a difference value representing the difference between said first and second magnitude values; and

a loop filter, connected to said subtractor, for generating said control

15   signal from said difference value.

12. A method of equalizing the amplitudes of the bandedges of a broadband signal comprising the steps of:

adjusting the amplitudes of the bandedges of said broadband signal

20   in response to a control signal;

extracting a bandedge signal from said broadband signal; and

generating said control signal in response to said bandedge signal.

13. The method of claim 12 wherein said generating step further comprises

25   the steps of:

producing a first bandedge signal from said bandedge signal;

producing a second bandedge signal from said bandedge signal;

generating a first magnitude value representing a magnitude of said first bandedge signal; and

30   generating a second magnitude value representing a magnitude of said second bandedge signal.

14. The method of claim 13 wherein said control signal generating step further comprises the steps of:

    producing a difference value representing the difference between said 5 first and second magnitude values; and

    generating said control signal from said difference value.

15. The method of claim 12 wherein said adjusting step comprises the step of attenuating a particular bandedge of said broadband signal in response 10 to said control signal.

16. The method of claim 12 wherein said adjusting step comprises the step of amplifying a particular bandedge of said broadband signal in response to said control signal.